

PATENT COOPERATION TREATY

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From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

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BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP
LOS ANGELES

WRITTEN OPINION

(PCT Rule 66)

Applicant's or agent's file reference

2986.P029PCT

Date of Mailing
(day/month/year)

23 JUN 2005

REPLY DUE

within 2 months/days from
the above date of mailing

International application No.

PCT/US02/24267

International filing date (day/month/year)

29 July 2002 (29.07.2002)

Priority date (day/month/year)

25 April 2002 (25.04.2002)

International Patent Classification (IPC) or both national classification and IPC

IPC(7): H01L 27/10 and US Cl.: 257/207, 208, 211

Applicant

SYNPLICITY

1. This written opinion is the first (first, etc.) drawn by this International Preliminary Examining Authority.
2. This opinion contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2 (a)(ii) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application
3. The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. ~~The applicant may, before the expiration of that time limit, request this Authority to grant an extension. See rule 66.2(d).~~

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 25 August 2004 (25.08.2004)

Name and mailing address of the IPEA/US

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Form PCT/IPEA/408 (cover sheet)(July 1998)

WRITTEN OPINION

International application No.

PCT/US02/24267

I. Basis of the opinion

1. With regard to the **elements** of the international application:*

- ☒ the international application as originally filed
- ☒ the description:
 - pages 1-17, as originally filed
 - pages NONE, filed with the demand
 - pages NONE, filed with the letter of _____.
- ☒ the claims:
 - pages 18-23, as originally filed
 - pages NONE, as amended (together with any statement) under Article 19
 - pages NONE, filed with the demand
 - pages NONE, filed with the letter of _____.
- ☒ the drawings:
 - pages 1-10, as originally filed
 - pages NONE, filed with the demand
 - pages NONE, filed with the letter of _____.
- ☐ the sequence listing part of the description:
 - pages NONE, as originally filed
 - pages NONE, filed with the demand
 - pages NONE, filed with the letter of _____.

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages NONE
- ☐ the claims, Nos. NONE
- ☐ the drawings, sheets/fig NONE

5. ☐ This opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed."

WRITTEN OPINION

International application No.
PCT/US02/24267

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. STATEMENT

Novelty (N)	Claims <u>2,6,9-15,17,19 and 20</u>	YES
	Claims <u>1,7,8,16 and 18</u>	NO
Inventive Step (IS)	Claims <u>2,3,5,9,10,12 and 17</u>	YES
	Claims <u>1,4,6-8,11,13-16 and 18-20</u>	NO
Industrial Applicability (IA)	Claims <u>1-20</u>	YES
	Claims <u>NONE</u>	NO

2. CITATIONS AND EXPLANATIONS

Claims 1, 7-8, 16 and 18 lack novelty under PCT Article 33(2) as being anticipated by Krumm et al. (US 4,353,040).

Krumm et al. discloses an integrated circuit device (Figures 1A-1B) comprising:

- a) a plurality of signal lines S disposed within a substrate;
- b) a power grid disposed on said substrate and comprising: a plurality of power lines V having a first thickness; and a plurality of ground lines G having said first thickness, said power grid for supplying power and ground to circuitry of said substrate; and
- c) a shield mesh disposed on said substrate and comprising of a plurality of power lines V (first lines in claim 18) having a second thickness; and a plurality of ground lines G (second lines in claim 18) having said second thickness, wherein respective signal lines of said plurality of signal lines are disposed between a respective power line of said shield mesh and a respective ground line of said shield mesh, said shield mesh for reducing the effects of electronic cross-talk between nearby signal lines of said plurality of signal lines.

With respect to claims 7 and 16, said electronic cross-talk comprises capacitive and inductive coupling.

Claims 4, 6, 11, 13-15, 19 and 20 lack an inventive step under PCT Article 33(3) as being obvious over Krumm et al. (US 4,353,040).

Krumm et al. further discloses said power and ground lines of said shield mesh are alternatively disposed and parallel to each other within conductor planes (1-7) of said substrate. Krumm et al. does not specifically disclose the conductor planes formed of metal. However, metal such as copper, aluminum are conventional materials known in the art to form conductors for low resistivity. Therefore, it would have been obvious to one of ordinary skill in the art to form conductors of metal to increase conductivity of the conductors.

With respect to claim 6, 13 and 20, Krumm et al. discloses the circuit, wherein said power and ground lines of said shield mesh are alternatively disposed in a first direction parallel to each other within a first metal layer of said substrate and wherein said power and ground lines of said shield mesh are also alternatively disposed in a second direction parallel to each other within a second metal layer of said substrate, said second metal layer being underneath said first metal layer and wherein said first and second directions are 90 degrees apart.

With respect to claim 14, third lines of said first metal layer and third lines of said second metal layer are coupled together using first connections (Figure 3).

With respect to claim 15, fourth lines of said first metal layer and fourth lines of said second metal layer are coupled together using second connections (Figure 3).

WRITTEN OPINION

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Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

TIME LIMIT:

The time limit set for response to a Written Opinion may not be extended. 37 CFR 1.484(d). Any response received after the expiration of the time limit set in the Written Opinion will not be considered in preparing the International Preliminary Examination Report.